



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## BOOK REVIEWS

---

*Examples of Industrial Education.* By FRANK M. LEAVITT. Ginn & Co.  
Pp. viii+330.

Professor Leavitt defines industrial education as the training which should be given to that large group of children who are not going to higher schools. The higher schools are vocational in a very proper sense of the term, but they are limited in scope, not preparing for the simpler and more common industries. The opportunities offered by the higher schools are therefore inadequate from the point of view of the great majority of the people.

The second part of Professor Leavitt's discussion sets forth the sources of the present vigorous demand for a modification of our American schools in the direction of more industrial training. Organized labor when it is clear as to the meaning of such training, the manufacturer who wants better labor, the professional educator, and finally the social worker who sees the conditions under which most boys and girls live, all unite in demanding a reorganization of our school system. No mere addition to the course of study will satisfy this demand, there must be a genuine remodeling of the school.

The third part of the book describes what has been done at different centers in the United States in the organizing of industrial courses. Many summaries of this type have appeared in recent years in reports of commissions and in reports of committees. This summary is, however, more complete and consequently more valuable to the student than any of the other reports. It classifies the schools also in such a way as to define clearly the underlying principle exemplified in the different experiments.

The book is well adapted for use as a textbook with teachers' classes. The individual teacher, whatever his part in the elementary school, will also find it profitable to acquaint himself or herself with the movement which is exercising so powerful an influence in present-day elementary education.

Professor Leavitt's recommendation for a solution of the problem presented in his summary of existing conditions is tempered by a recognition of the necessity of dealing with the present schools and reorganizing them rather than merely adding to them. He is prepared accordingly to favor several plans as particular circumstances may dictate in various cases. Some differentiation from the sixth grade on is the general solution of the problem, and much preparatory work can be carried on below the fifth grade in anticipation of the reorganization which is to be entered upon at the sixth grade. The exact character of this differentiation and of the preparatory work remains to be worked out in subsequent studies.

---

CHARLES H. JUDD

*A Scale for Measuring the Quality of Handwriting of School Children.* By LEONARD P. AYRES, Department of School Hygiene, Russell Sage Foundation. New York, 1912.

This report sets forth the results of an investigation of the legibility of handwriting and of an attempt to construct a scale for the measurement of legibility on

the basis of this investigation. As a basis for the study a large number of samples of the handwriting in the upper school grades were collected from forty cities in widely different parts of the United States. Of the samples which were returned 1,578 were found to be satisfactory and were used for the investigation. The method by which the samples were graded was to measure the average time which was required by ten investigators to read the individual samples. For this method it was necessary that the content of the different samples be not the same; on the other hand it was necessary that they be of approximately equal difficulty. These requirements were met by using the same subject-matter but throwing the words out of their natural order. Thirty different arrangements of the words were made.

After the time of reading the samples had been measured they were arranged in order on the basis of this measurement. The distribution of the papers was then investigated in order to determine whether it followed any law, particularly whether it accorded with the normal distribution. It was found in a preliminary examination that the samples did apparently fall into such a distribution. Assuming a normal distribution, then, the samples were divided into steps of equal interval by separating them into such groups as would be produced in the normal distribution by dividing it into equal steps. It was found that the successive steps which were thus marked off and which have been described as equal in legibility were not exactly equal in the time which was required to read them. They rather formed a series which progressed with approximately the ratio of 117 per cent. This was due to the fact that there was greater difference in the time required to read the samples which represented the successive steps in the lower part of the scale than in the upper part. In other words, a progression by (assumed) equal steps in the objective quality of the writing corresponded to a progression by regularly diminishing steps in the speed at which the writing could be read, or the subjective legibility. The actual series of steps nearly approximated a regular progression so that a theoretical series, in which there was a regular progression of 117.2 per cent between the successive steps, was substituted for the actual one.

This gives us a series of samples, then, which are assumed to progress by equal steps in legibility from the lowest to the highest. The whole range of distribution was divided into ten steps and designated by the numbers 1 to 100, but only those from 20 to 90 are actually represented upon the scale. This form of division is used because it corresponds to the grading in common use.

In order to meet one of the criticisms to which the Thorndike scale is subject, the author selected and furnishes for each step in the scale a sample of three styles of writing. These styles are distinguished according to their slant into vertical, medium slant, and extreme slant writing. There are then in the scale three parallel series of samples, and in measuring any particular sample, the style of writing on the scale which it most nearly resembles is to be chosen for comparison. This device is undoubtedly calculated to make the grading of writing by means of the scale very much easier.

It may be pointed out, however, that there are difficulties in using the scale as it stands as a means of grading the writing of the children in the different school grades. This is due to the fact that a different standard should be required of the children in the different years. For example, the writing which is equal to quality 60 may be perfectly satisfactory for a sixth-grade child but not for an eighth-grade child. Therefore, in order to make the grade conform to the grading in the other

school subjects the measurements in the lower grades must be transmuted into other terms. This difficulty might be overcome by fixing a standard for attainment by the different grades and designating this standard by the mark 90 for that grade. The development of such a standard makes a suitable problem for investigation.

Another difficulty which will be met in applying the scale for grading writing is that the greater part of the writing of the school children will fall within the middle divisions of the scale. That is, according to the law of normal distribution which was found to apply to the writing of school children, approximately one-half of the cases fall between the grades 40 and 60 upon the scale and one-quarter fall below grade 40. This means that if 70 per cent were taken as the passing mark, as it ordinarily is in school work, three-quarters of the children would fail to pass. Obviously, then, the results of measurement by the scale cannot be used directly to express the grade of the child's writing.

The other purpose for which the scale is intended is for the survey of writing of children in different school systems and under different methods of instruction. It is intended, in other words, to be used as a tool for investigation. From this point of view, as also from the point of view of practical use in the schoolroom, the scale by itself is very deficient for the reason that it measures only one of the essential characteristics of good writing. The acquirement of speed is as essential in learning to write as the acquirement of legibility. It is, therefore, not sufficient in judging a child's writing to measure merely the legibility. The scale as it stands can be used, however, as a basis for a part of the test, and is probably adequate, provided it is supplemented by a measurement of speed.

As a measurement merely of the scale of legibility, the scale appears to be very well constructed. The fact that it conforms so closely to the normal distribution gives a presumption in its favor. The fact that it was constructed on the basis of objective measurement rather than of mere subjective judgment is also a strong point in its favor. It cannot be applied, of course, by the same method of objective measurement by which it was constructed, but the fact that it is based upon a perfectly clear and unambiguous quality of writing will doubtless make the results of its application fairly uniform and reliable. Whether or not this expectation will be confirmed by trial remains to be seen, but at any rate the scale merits careful trial under various conditions. If it proves to be an accurate means of measurement it will furnish an exceptional means of comparing writing in widely different places because of the prominence of the agency which stands sponsor for it.

THE UNIVERSITY OF CHICAGO

FRANK N. FREEMAN